

REMARKS

Claims 1-11 are pending in this application. Claims 1 and 6 are amended by this response. Support for the amendments to the claims may be found throughout the specification and drawing figures and, more specifically, on page 5, line 36 – page 6, line 35. No new matter is added by these amendments.

Telephone Interview Summary

Applicant's Representative would like to thank Examiner Blair for the courtesy extended during the Telephone Interview on February 17, 2010. Prior to the Telephone Interview, Applicant's Representative provided a set of proposed amended claims in order to overcome the rejection of claims 1, 3 – 6 and 8 – 10 under 35 USC 101. The proposed amended claims identify that the method is performed "using an MPEG-4 encoder" (claim 1) and an "MPEG-4 decoder" (claim 6). As confirmed by the Interview Summary issued on February 22, 2010, an agreement was reached between Applicant's Representative and Examiner Blair that the inclusion of these elements result in the method being "tied to a particular machine" as required under 35 USC 101. Examiner Blair indicated that a copy of the amended claims is attached to the Interview Summary to identify the nature of the agreement was reached. Additionally, the Examiner noted a grammatical error in the proposed claims and requested correction thereof. Specifically, the phrase "at a MPEG-4 decoder" should read "at an MPEG-4 decoder". This correction is made in the amended claims submitted with this response.

Additionally, Applicant's Representative would like to note that the set of proposed amended claims attached to the Interview Summary include a feature that is not being included with the present response. Specifically, the phrase "to modify control parameter limitations of said MPEG-4 BIFS stream" was added as an alternative feature to be considered for purposes of discussion only if the inclusion of the MPEG-4 encoder in claim 1 was insufficient to overcome the rejection under 35 USC 101. Examiner Blair indicated that this feature was not necessary to overcome the rejection under 35 USC 101 because the inclusion of the MPEG-4 encoder and MPEG-4 decoder enabled the method

to be tied to a particular machine. Applicant's Representative noted that this phrase would not be added in the formal response and Examiner Blair agreed that the inclusion of the encoder (claim 1) and decoder (claim 6) was sufficient to overcome the rejection under 35 USC 101.

Rejection of Claims 1, 3-6 and 8-10 under 35 USC § 101

Claims 1, 3-6 and 8-10 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention because they do not transform the underlying subject matter to a different state or thing, and are not tied to a particular machine. Claim 1 is amended to recite that the claimed steps are tied to and performed by an MPEG-4 encoder. Claim 1 is also amended to recite that the stream encoded by MPEG-4 encoder transmits "one or more impulse responses associated with a coded audio signal" and "inserting a length of information of the impulse response and samples representing the impulse response". Additionally, Claim 6 is amended to recite that the claimed steps are performed by "an MPEG-4 decoder".

The Office Action asserts that the recited method is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. Applicant strongly disagrees with this assertion. Specifically, the claimed method involves encoding information in particular parameter fields in a data stream that is associated with a coded audio signal and which provides information regarding how that coded audio signal is to be output. In operation, information in successive data fields in a data stream are used to impart and/or change certain characteristics of a coded audio signal upon output of the coded audio signal. The information in these fields are encoded in multiple fields and it's the information in these multiple fields that is used to define a particular impulse response for an associated coded audio signal. It would be impossible for an individual to mentally store this information and use it to effect a coded audio signal. Rather, the claimed method clearly is tied to an encoding device that inserts the requisite information in the data stream effects the coded audio signal that is contained in the MPEG-4 stream. Thus, claimed method is inherently

tied to an encoding device, and, more specifically, “an MPEG-4 encoder”.

The Court of Appeals for Federal Circuit’s recent *In re Bilski* decision stated that “The Supreme Court ... has enunciated a definitive test to determine whether a process claimed is tailored narrowly enough to encompass only a particular application of a fundamental principle rather than to pre-empt the principle itself. A claimed process is surely patent-eligible under § 101 if ... (1) it is tied to a particular machine or apparatus” (*In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008)). The inclusion of an MPEG-4 encoder is a particular apparatus that performs the claimed activities. An MPEG-4 encoder is known to those skilled in the art to include specific hardware circuitry used in the present claimed arrangement. Therefore, in view of the remarks above regarding the inability for the claimed method to be performed as a series of mental steps, it is submitted that physical circuitry must be used to perform the activities recited in the claims. *Bilski*, at 957. See also *Benson*, 409 U.S. at 68-69 (comparing *O’Reilly v. Morse*, 56 U.S. (15 How.) 62 (1854), to *The Telephone Cases*, 126 U.S. 1 (1888) the Court explained that Morse’s eighth claim was disallowed because it failed to recite any machinery, however, Bell’s claim was patentable because it recited specified conditions for using a particular circuit).

Furthermore, in view of *Bilski*, “A claimed process is surely patent-eligible under §101 if it ... (2) transforms a particular article into a different state or thing” (*In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008)). Claim 1 specifically recites that “a length of information of the impulse response and samples representing the impulse response” is used “to transform the coded audio signal based on the length information and samples”. Thus, the coded audio signal that is associated with the MPEG-4 BIFS stream is transformed from one state to another “based on the length information and samples” that are encoded in the MPEG-4 BIFS stream. Therefore, the operations recited in the claims change and process underlying data, which cannot be performed mentally, verbally or without a machine. 35 U.S.C. § 101 states that any new and useful machine or improvement thereof may obtain a patent. As can be seen by the claims, the hardware components are used to perform the various steps of the present claimed arrangement. Therefore,

Applicant respectfully submits that the method of claim 1 satisfied both prongs of the machine or transformation test set forth in *In re Bilski*.

As claims 2 – 5 are dependent on claim 1, it is respectfully submitted that the claims 2 – 5 are also patentable subject matter because they are tied to a specific machine and transform an article from one state to a second different state.

Claim 6 is amended to recite a “method for decoding impulse responses of audio signals **“by an MPEG-4 decoder”** and specifically ties the steps of “receiving”, “separating” and “using” to the particular MPEG-4 decoder. Thus, Applicants respectfully submit that these steps are tied to a particular machine and are therefore patentable subject matter under 35 USC 101. Moreover, contrary to the assertion in the Office Action, Applicant fails to understand how steps that include “receiving... one or more impulse responses in multiple successive MPEG-4 PROTO params fields of an MPEG-4 BIFS stream” could be processed mentally. A data stream that is associated with a coded audio signal and which modifies the output of the coded audio signal as in the claimed arrangement requires the use of electronic circuitry and, more specifically, an MPEG-4 decoder to properly process and apply the information in the data stream. A stream of data is a tangible object that requires hardware circuitry to properly process the information contained therein. Consequently, the method of claim 6 is tied specifically to a particular machine and therefore is patentable subject matter under 35 USC 101.

As claims 8 – 11 are dependent on claim 6, it is respectfully submitted that the claims 8 – 11 are also patentable subject matter because they are tied to a specific machine.

In view of the above remarks and amendments to the claims, it is respectfully submitted that claims 1 – 6 and 8 – 11 are patentable subject matter under 35 USC 101. Therefore, it is respectfully submitted that this rejection is overcome and should be withdrawn.

Rejection of claims 1, 6 and 11 under 35 U.S.C. 103(a)

Claims 1, 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE (E.D. Scheirer: "The MPEG-4 Structured Audio Standard" ACOUSTICS, SPEECH AND SIGNAL PROCESSING, 1998. PROCEEDINGS OF THE 1998 IEEE INTERNATIONAL CONFERENCE ON SEATTLE, WA. USA, 12-15 May 1998, vol. 6, pages 3801-3804, hereinafter known as "IEEE") in view of Lifshitz (U.S. Patent No. 6,833,840 B2).

The failure of an asserted combination to teach or suggest each and every feature of a claim remains fatal to an obviousness rejection under 35 U.S.C. § 103. Section 2143.03 of the MPEP requires the "consideration" of every claim feature in an obviousness determination. To render a claim unpatentable, however, the Office must do more than merely "consider" each and every feature for this claim. Instead, the asserted combination of the patents must also teach or suggest *each and every claim feature*. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). Indeed, as the Board of Patent Appeal and Interferences has recently confirmed, a proper obviousness determination requires that an Examiner make "a searching comparison of the claimed invention - *including all its limitations* - with the teaching of the prior art." See *In re Wada and Murphy*, Appeal 2007-3733, citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The present claimed arrangement provides coding impulse responses of audio signals. The impulse responses allow reproduction of sound signals corresponding to a certain room characteristic. An MPEG-4 encoder is used to encode multiple successive MPEG-4 PROTO params fields of an MPEG-4 BIFS stream for transmission of one or more impulse responses associated with a coded audio signal. Information about the following MPEG-4 PROTO params fields is inserted into a first of the multiple

successive MPEG-4 PROTO params fields. The information includes a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted. A length information of the impulse response and samples representing the impulse responses are inserted into the following MPEG-4 PROTO params fields for each of the impulse responses. IEEE and Lifshitz, when taken individually or in combination, do not teach or suggest the features of the present claimed arrangement.

IEEE describes that the MPEG-4 standard defines numerous tools that represent the state-of-the-art in representation, transmission, and decoding of multimedia data. Among these is a new type of audio standard termed "Structured Audio." The MPEG-4 standard for structured audio allows for the efficient flexible description of synthetic music and sound effects, and the use of synthetic sound in synchronization with natural sound in interactive multimedia scenes. A discussion of the capabilities, technological underpinnings, and application of MPEG-4 Structured Audio is presented.

However, IEEE (with Lifshitz) neither teaches nor suggests "using multiple successive MPEG-4 PROTO params fields ... for transmission of one or more impulse responses ... inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields by said MPEG-4 encoder" as recited in claim 1 of the present arrangement. The subject matter of IEEE is based upon the Structured Audio standard specified in ISO/IEC 14496-3 subpart 5 (*see* IEEE page 3801, col.1, paragraph [0002] and the title of IEEE "The MPEG-4 Structured Audio Standard). This standard describes the transmission of room impulse responses which make use of the Structured Audio Sample Bank Format (SASBF) in wavetables. Usage of the SASBF requires a structured audio implementation or "structured coding schemes" (IEEE page 3801, col. 1, paragraph [0002]). While IEEE describes "a block of sample data" that "might contain an impulse response" (IEEE page 3803, col. 1, paragraph [0002]), IEEE (with Lifshitz) does not teach or suggest "inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields" as recited in claim 1 of the present arrangement. The inclusion of impulse response data is not equivalent to inserting into a first field type data

about multiple successive fields of the same type. The claimed arrangement advantageously makes use of multiple successive MPEG-4 PROTO fields to define a number of fields and impulse responses that are being transmitted in the data stream and associated with a particular coded audio signal. IEEE uses a different standard, i.e. Structured Audio, which may include impulse response. This is fundamentally different from the claimed method which utilizes multiple successive MPEG-4 PROTO fields to provide information including the number of MPEG-4 PROTO fields and the impulse responses to be transmitted.

Therefore, because IEEE (with Lifshitz) does not teach or suggest “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO param fields by said MPEG-4 encoder,” IEEE (with Lifshitz) cannot teach or suggest “wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” as recited in claim 1 of the present arrangement.

Unlike the claimed arrangement, IEEE transmits impulse responses in a frame-like basis by using “blocks of sample data” which are received by a synthesis engine (IEEE page 3803, col. 1, paragraphs [0002] and [0003]). The synthesis engine then acts “roughly like a set of fixed synthesizers” by “receiving commands” and turning them into sound. Contrary to this, the present claimed arrangement uses the params array in order to transmit room impulse responses. Using blocks of sample data as in IEEE (with Lifshitz) is not equivalent to using the params array as in the claimed arrangement. IEEE (with Lifshitz) does not contemplate the use of a params array to transmit room impulse responses. In the present arrangement, information about the following MPEG-4 PROTO params fields is inserted “a first of said multiple successive MPEG-4 PROTO params fields” as recited in claim 1 of the present arrangement. IEEE (with Lifshitz) fails to operate in this manner. Furthermore, IEEE (with Lifshitz) does not teach or suggest “inserting into said following MPEG-4 PROTO params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement.

IEEE describes transmitting the header of a structured audio bit stream information to create a reverberation effect at the receiving end. Specifically, IEEE recites: “However, transmission of a reverberation algorithm written in SAOL is very inexpensive, perhaps no more than 200 bytes in the header ... Such a sound only requires as much bandwidth as is needed for the flat speed, plus a tiny overhead for the reverberator” (page 3803, right column, paragraph [0003], emphasis added). In contrast, the present claimed arrangement concerns a transmission and use of extensive room impulse responses (see Specification, page 9, lines 24-39) and transmits impulse responses of any length possible (see Specification, page 7, lines 5-6). The present claimed arrangement recognizes the importance of this since impulse responses can be very long (several seconds for a big church or hall). The transmission and use of real, measured room impulse responses allow a much more natural sound than the use of synthetic room impulse responses requires a significant amount of data (see Specification, page 7, lines 5-6, page 7, lines 23-24, page 2 lines 3-6). The present claimed arrangement realizes that the transmission of such long impulse responses is difficult in the MPEG-4 environment and that the use of a structured audio implementation – as described in IEEE – has extreme high demands for code, complexity and execution power, and, therefore, is impracticable for MPEG-4 players at the time of the invention (see Specification, page 2, lines 6-18). However, the present claimed arrangement found a solution to transmit such extended impulse responses in a way compatible to the MPEG-4 standard by using “multiple successive MPEG-4 PROTO params fields” as recited in amended claim 1.

Page 3 of the Office Action concedes that IEEE does not explicitly teach the feature wherein successive MPEG-4 fields are MPEG-4 PROTO params fields. Therefore, it follows that IEEE cannot teach or suggest the feature of “inserting into a first of said multiple successive MPEG-4 PROTO params fields following MPEG-4 PROTO params fields, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted; and inserting into said following MPEG-4 PROTO params fields for each of

said impulse responses, a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement. The Office Action asserts that Lifshitz shows the claimed features of the present arrangement and combining the teachings of IEEE with Lifshitz would make the present claimed arrangement unpatentable. Applicants respectfully disagree with this assertion.

Lifshitz describes a PROTO implementation in MPEG-4. A PROTO object class, instantiating a PROTO object, calling the PROTO object into an MPEG-4 scene graph, and rendering the PROTO object is defined.

Lifshitz describes a PROTO implementation in MPEG-4 but does not teach or suggest MPEG-4 PROTO params fields of a data stream that is associated with a coded audio signal as in the present claimed arrangement. Furthermore, Lifshitz does not even remotely teach or suggest transmitting one or more impulse responses using a PROTO implementation. The Office Action cites col. 4, lines 27-53 of Lifshitz as disclosing the features of the present claimed arrangement. Applicants respectfully disagree. The cited passage of Lifshitz recites “Version 2 of the MPEG-4 standard introduces PROTOs ... PROTOs may be better understood with reference to FIGS. 3 and 4 which represents a scene having two Person objects. In FIG. 3 both Person objects 300 and 302 have the same structure, each comprising a Voice object 304 and a Sprite object 306. The Voice and Sprite objects 304 and 306 may have different attributes as expressed by different field values” (Col. 4, lines 27-49). The cited passage describes that PROTOs are used. However, nowhere in the cited passage or elsewhere in Lifshitz (with IEEE) is there suggestion or disclosure of “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” as recited in claim 1 of the present arrangement. The mere disclosure that a certain type of field, i.e. PROTO fields, is not equivalent to inserting data into multiple successive PROTO params fields in an MPEG-4 BIFS data stream as in the claimed arrangement. Further, Lifshitz (with IEEE) does not teach or suggest “inserting into said following MPEG-4

PROTO params fields for each of said impulse responses a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement.

Even if the systems of IEEE and Lifshitz were combined, as suggested by the Office Action, the combination, similar to the individual systems, would not make the present claimed arrangement unpatentable. The combined system describes the use of a Structured Audio format and other possible uses of MPEG-4 technology. The combined system also describes PROTO implementation in MPEG-4. However, the combined system, similar to the individual systems of IEEE and Lifshitz, neither teaches nor suggests MPEG-4 PROTO params fields. Further, there is no suggestion or disclosure in the combined system of transmitting one or more impulse responses, as recited in the present claimed arrangement. Therefore, the combined system, similar to the individual systems of IEEE and Lifshitz, neither teaches nor suggests “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” as recited in claim 1 of the present arrangement. Additionally, the combined system does not teach or suggest “inserting into said following MPEG-4 PROTO params fields for each of said impulse responses a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement. Consequently, withdrawal of the rejection of claim 1 under 35 U.S.C. §103 is respectfully requested.

Independent claim 6 contains features similar to those of claim 1 and is considered patentable for the reasons set forth above regarding claim 1. Therefore, withdrawal of the rejection of claim 6 under 35 U.S.C. §103(a) is respectfully requested.

Independent claim 11 provides the apparatus for the method of claim 1 and is considered patentable for the reasons set forth above regarding claim 1. Therefore, withdrawal of the rejection of claim 11 under 35 U.S.C. §103(a) is respectfully requested.

In view of the above remarks, it is respectfully submitted that the present claimed arrangement is patentable under 35 U.S.C. §103(a) and withdrawal of this rejection is respectfully requested.

Rejection of claims 3 and 8 under 35 U.S.C. 103(a)

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE in view of Lifshitz (U.S. Patent No. 6,833,840 B2) in further view of (Koenen, Rob. Coding of Moving Pictures and Audio: MPEG-4 Overview (V.21 – Jeju Version), Rep. No. ISO/IEC JTC1/SC29/WG11 N4668., International Organization for Standardization. 2002. 1-79, hereinafter referred to as “Koenen”).

Claim 3 is dependent on claim 1 and is considered patentable for the same reasons as claim 1. For the reasons presented above, IEEE and Lifshitz neither teach nor suggest the features of claim 1 of the present arrangement. Additionally, Applicant respectfully submits that Koenen, when taken individually or in combination with IEEE, does not teach or suggest the features of the present claimed arrangement.

Koenen describes an overview of the MPEG-4 standard, explaining which pieces of technology it includes and what sort of applications are supported by it. Koenen, similar to IEEE and Lifshitz, also neither teaches nor suggests “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields by said MPEG-4 encoder, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” as recited in claim 1 of the present arrangement. Although Koenen (with IEEE and Lifshitz) describes the scope and certain features of MPEG-4, it does not contemplate the use of “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields by said MPEG-4 encoder, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” as recited in claim 1 of the present

arrangement. Therefore, Koenen neither teaches nor suggests the claimed features recited in claim 1 of the present arrangement.

Koenen merely mentions that “PROTOS” are one of the new functionalities for “version 2 BIFS” in section 10.6.1 on page 44. However, Koenen (with IEEE and Lifshitz) does not describe any details of the PROTOS and does not teach or suggest “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields” as recited in claim 1 of the present arrangement. Further, as Koenen (with IEEE and Lifshitz) do not insert information about the following MPEG-4 PROTO params field into a first of the multiple successive MPEG-4 PROTO params fields as in the present claimed arrangement, Koenen (with IEEE and Lifshitz) also neither teaches nor suggests “inserting into said **following MPEG-4 PROTO** params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement.

The combination of IEEE, Lifshitz and Koenen, similar to the individual systems, also neither teaches nor suggests “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields by said MPEG-4 encoder, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” and “inserting into said following MPEG-4 PROTO params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement. The combination of IEEE, Lifshitz and Koenen merely describes the use of a Structured Audio format and other possible uses of MPEG-4 technology, as well as PROTO implementation in MPEG-4. However, the combined system does not teach or suggest MPEG-4 PROTO params fields, as in the present claimed arrangement. The present claimed arrangement, in contrast provides for “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields” as recited in claim 1 of the present arrangement. Therefore, the

combination of IEEE, Lifshitz and Koenen, similar to the individual systems, neither teaches nor suggests “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields by said MPEG-4 encoder, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” and “inserting into said following MPEG-4 PROTO params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement.

As IEEE, Lifshitz and Koenen, when taken alone or in any combination, do not teach or suggest all of the features of claim 1, it follows that since claim 3 is dependent on claim 1, claim 3 is considered patentable for the reasons presented above regarding claim 1. Therefore, it is respectfully requested that the rejection to claim 3 is satisfied and should be withdrawn.

IEEE, Lifshitz and Koenen, when taken alone or in any combination, also do not teach or suggest all of the features of claim 6. As claim 6 contains features similar to those found in claim 1, claim 6 is considered patentable for the reasons set forth above regarding claim 1. As claim 8 is dependent on claim 6, claim 8 is also considered patentable for the reasons set forth above regarding claim 6. Therefore, it is respectfully requested that the rejection to claim 8 is satisfied and should be withdrawn.

In view of the above remarks, it is respectfully submitted that the present claimed arrangement is patentable under 35 U.S.C. §103(a) and withdrawal of this rejection is respectfully requested.

Rejection of claims 4, 5, 9, and 10 under 35 U.S.C. 103(a)

Claims 4, 5, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE in view of Lifshitz further in view of Koenen and further in view of (Scheirer, Eric D. “Structured audio and effects processing in the MPEG-4 multimedia standard.”

MULTIMEDIA SYSTEMS 7 (1999): 11-22, hereinafter referred to as "Multimedia Systems").

Claims 4 and 5 are dependent on claim 1 and are considered patentable for the same reasons as claim 1. For the reasons presented above, IEEE, Lifshitz and Koenen, when taken individually or in any combination, neither teach nor suggest the features of claim 1 of the present arrangement. Additionally, Applicants respectfully submit that Multimedia Systems, when taken individually or in any combination with IEEE, Lifshitz and Koenen, does not teach or suggest the features of the present claimed arrangement.

Multimedia Systems describes an overview of the "Structured Audio" and "AudioBIFS" components of MPEG-4, which enable the description of synthetic soundtracks, musical scores, and effects algorithms and the compositing, manipulation, and synchronization of real and synthetic audio sources. A discussion of the separation of functionality between the systems layer and the audio toolset of MPEG-4 is presented, and prospects for efficient DSP-based implementations are discussed.

Multimedia Systems, similar to the individual systems of IEEE, Lifshitz and Koenen, neither teaches nor suggests "inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields by said MPEG-4 encoder, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted" and "inserting into said following MPEG-4 PROTO params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response" as recited in claim 1 of the present arrangement. Multimedia Systems merely provides a description of the Structured Audio components of MPEG-4. However, as stated above in the arguments regarding IEEE, Lifshitz and Koenen, the present claimed arrangement provides a method that allows for the circumvention of transmission of impulse responses using Structured Audio. Thus, Multimedia Systems, similar to the individual systems of IEEE and Koenen, neither teaches nor suggests "inserting into a first of said multiple successive MPEG-4 PROTO

params fields information about the following MPEG-4 PROTO params fields, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” and “inserting into said following MPEG-4 PROTO params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement.

Multimedia System and IEEE were written by the same author and were roughly published at the same time and use similar terminology; however, Multimedia Systems is only cumulative to IEEE. Multimedia Systems, similar to IEEE, does not at all teach or suggest PROTOs. Similar to IEEE, Multimedia Systems describes the use of the Structured Audio Sample Bank Format (SASBF) and Structured Audio Orchestra Language (SAOL). The SASBF and SAOL are used to apply advanced effects by using custom filters or reverberators (*see* page 15, section 2.3.6). Further, Multimedia Systems recites:

“For one, it is a clear advantage to minimize the number of SAOL processes running, as they will often be the most computationally complex part of an audio system. If there are to be multiple Structured Audio processes (whether for decoding or for effects processing) in a terminal, they will each require a run-time package, and therefore either a multiple-DSP system or a multithreaded scheduler (on the DSP) must be used. Neither of these alternatives is practical today” (page 2, section 4.1, last paragraph).

The author of Multimedia Systems (and IEEE) realizes that the structured audio implementation for transmitting impulse responses described in the system is too complex for practical use. However, contrary to the present claimed arrangement, the author of Multimedia Systems (and IEEE) did not come up with the solution for this problem. Even the combination of Multimedia Systems, IEEE, Lifshitz and Koenen does not solve this problem and does not teach or suggest the features of the present claimed arrangement.

The combination of IEEE, Lifshitz, Koenen, and Multimedia Systems, similar to the individual systems, neither teaches nor suggests “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields by said MPEG-4 encoder, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” and “inserting into said following MPEG-4 PROTO params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement. The combination of IEEE, Lifshitz, Koenen, and Multimedia Systems, merely describes the use of a Structured Audio format and other possible uses of MPEG-4 technology, but does not contemplate the use of “MPEG-4 PROTO params fields” as recited in claim 1 of the present arrangement. The present claimed arrangement, in contrast, provides for “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields ... inserting into said following MPEG-4 PROTO params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response.” These features are neither taught nor suggested by the combined system. Therefore, the combination of IEEE, Lifshitz, Koenen, and Multimedia Systems, similar to the individual systems, neither teaches nor suggests “inserting into a first of said multiple successive MPEG-4 PROTO params fields information about the following MPEG-4 PROTO params fields, wherein said information comprises a number of the following MPEG-4 PROTO params fields to be used and a number of impulse responses to be transmitted” and “inserting into said following MPEG-4 PROTO params fields for each of said impulse responses, a length information of the impulse response and samples representing the impulse response” as recited in claim 1 of the present arrangement.

As IEEE, taken alone or in any combination with Lifshitz, Koenen and Multimedia Systems, does not teach or suggest all of the features of claim 1, it follows that since claims 4 and 5 are dependent on claim 1, claims 4 and 5 are considered

patentable for the reasons presented above regarding claim 1. Therefore, it is respectfully submitted that the rejection to claims 4 and 5 is satisfied and should be withdrawn.

IEEE, when taken alone or in any combination with Lifshitz, Koenen and Multimedia Systems, also does not teach or suggest all of the features of claim 6. As claim 6 contains features similar to those found in claim 1, claim 6 is considered patentable for the reasons set forth above regarding claim 1. Since claims 9 and 10 are dependent on claim 6, claims 9 and 10 are considered patentable for the reasons set forth above regarding claims 1 and 6. Therefore, it is respectfully requested that the rejection to claims 9 and 10 is satisfied and should be withdrawn.

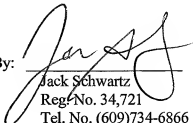
In view of the above remarks, it is respectfully submitted that the present claimed arrangement is patentable under 35 U.S.C. §103(a) and withdrawal of this rejection is respectfully requested.

Having fully addressed the Examiner's rejections, it is believed that, in view of the amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicant's attorney at the phone number below, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No additional fee is believed due. However, if an additional fee is due, please charge the fee to Deposit Account 07-0832.

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Respectfully submitted,
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